



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2010-0562; Directorate Identifier 2009-NE-29-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce plc Turboprop Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede an existing airworthiness directive (AD) that applies to all Rolls-Royce plc (RR) model RB211 Trent 553-61, 553A2-61, 556-61, 556A2-61, 556B-61, 556B2-61, 560-61, and 560A2-61; and RB211 Trent 768-60, 772-60, and 772B-60; and RB211-Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17; and RB211-524G2-T-19, -524G3-T-19, -524H-T-36, and -524H2-T-19 turboprop engines that have a high-pressure (HP) compressor stage 1 to 4 rotor disc installed, with a certain part number (P/N) installed. The existing AD requires repetitive inspections of the axial dovetail slots, and follow-on corrective action depending on findings. This proposed AD expands the population of affected parts. This proposed AD also changes, for the purposes of this AD, the definition of “engine shop visit.” We are proposing this AD to detect cracks in the HP compressor stage 1 and 2 disc posts, which could result in failure of the disc post and HP compressor blades, damage to the engine, and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011-44-1332-242424; fax: 011-44-1332-249936; or email: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); or download the publication from <http://www.aeromanager.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Frederick Zink, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email: [frederick.zink@faa.gov](mailto:frederick.zink@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2010-0562; Directorate Identifier 2009-NE-29-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

On February 23, 2012, we issued AD 2012-04-13, Amendment 39-16969 (77 FR 13483, March 7, 2012), for all RR model RB211 Trent 553-61, 553A2-61, 556-61, 556A2-61, 556B-61, 556B2-61, 560-61, and 560A2-61; and RB211 Trent 768-60, 772-60, and 772B-60; and RB211-Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17; and RB211-524G2-T-19, -524G3-T-19, -524H-T-36, and -524H2-T-19 turbofan engines that have a HP compressor stage 1 to 4 rotor disc installed, with a P/N listed in Table 1 of that AD. That AD requires repetitive inspections of the axial dovetail slots, and follow-on corrective action depending on findings. That AD changed the definition of a shop visit to be less restrictive. We issued that AD to detect cracks in the HP compressor stage 1 and 2 disc posts, which could result in failure of the disc post and HP compressor blades, damage to the engine, and damage to the airplane.

### **Actions Since Existing AD Was Issued**

Since we issued AD 2012-04-13, Amendment 39-16969 (77 FR 13483, March 7, 2012), RR engineering identified additional affected HP compressor rotor discs that require the same action. As a result of the additional population of discs, this proposed rule would increase the total cost to the U.S. fleet.

Also, since we issued AD 2012-04-13, Amendment 39-16969 (77 FR 13483, March 7, 2012), we changed the definition of “engine shop visit” to be less restrictive. In the existing AD, we define “engine shop visit” to be whenever all compressor blades are removed from the HP compressor drum. In this proposed AD, we define “engine shop visit” to be whenever the HP compressor rotor is accessible for removal of the compressor blades. Under the revised definition in this proposed AD, engine shop visit will occur more frequently, likely resulting in earlier inspection of the Stage 1 to 4 rotor disc than would occur under the original definition. This is more in line with the instructions in revised RR Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AF964, Revision 3, dated January 11, 2013.

### **Relevant Service Information**

We reviewed RR Alert NMSB RB.211-72-AF964, Revision 3, dated January 11, 2013. The Alert NMSB describes procedures for cleaning and inspecting the axial dovetail slots. We also reviewed European Aviation Safety Agency AD No. 2013-0042, dated February 26, 2013, which requires inspection of the new rotor discs.

### **FAA’s Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

### **Proposed AD Requirements**

This proposed AD would retain all of the requirements of AD 2012-04-13, Amendment 39-16969 (77 FR 13483, March 7, 2012). This proposed AD would expand the population of parts to be inspected.

### **Costs of Compliance**

We estimate that this proposed AD would affect about 432 engines installed on airplanes of U.S. registry. We also estimate that it would take about 20 hours per product to comply with this AD. The average labor rate is \$85 per hour. No parts would be required per product. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$734,400.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national

Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2012-04-13, Amendment 39-16969 (77 FR 13483, March 7, 2012), and adding the following new AD:

**Rolls-Royce plc:** Docket No. FAA-2010-0562; Directorate Identifier 2009-NE-29-AD.

#### **(a) Comments Due Date**

The FAA must receive comments on this AD action by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD supersedes AD 2012-04-13, Amendment 39-16969 (77 FR 13483, March 7, 2012).

**(c) Applicability**

This AD applies to the following Rolls-Royce plc (RR) model turbofan engines that have a high-pressure (HP) compressor stage 1 to 4 rotor disc installed, with a part number (P/N) listed in Table 1 of this AD:

- (1) RB211 Trent 553-61, 553A2-61, 556-61, 556A2-61, 556B-61, 556B2-61, 560-61, and 560A2-61; and
- (2) RB211 Trent 768-60, 772-60, and 772B-60; and
- (3) RB211-Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17; and
- (4) RB211-524G2-T-19, -524G3-T-19, -524H-T-36, and -524H2-T-19.

**Table 1 to paragraph (c) – Affected HP Compressor Stage 1 to 4 Rotor Disc P/Ns by Engine Model**

Engine model	HP compressor stage 1 to 4 rotor disc P/N
(1) RB211 Trent 553-61, 553A2-61, 556-61, 556A2-61, 556B-61, 556B2-61, 560-61, and 560A2-61.	FK30524 or FW88340.
(2) RB211 Trent 768-60, 772-60, and 772B-60.	FK22745, FK24031, FK23313, FK25502, FK26185, FK32129, FW20195, FW20196, FW20197, FW20638, FW23711, FW88695, FW88696, FW88697, FW88698, FW88699, FW88700, FW88701, FW88702, or FW88703.
(3) RB211 Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17, and 895-17.	FK24009, FK26167, FK32580, FW11590, FW61622, FW88723, FW88724, or FW88725.
(4) RB211-524G2-T-19, -524G3-T-19, -524H-T-36, and -524H2-T-19.	FK25502, FW20195, FW23711, FW88695, FW88696, or FW88697.

**(d) Unsafe Condition**

We are issuing this AD to detect cracks in the HP compressor stage 1 and 2 disc posts, which could result in failure of the disc post and HP compressor blades, damage to the engine, and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(f) Cleaning and Inspection**

(1) Clean and perform a fluorescent-penetrant inspection of the HP compressor stage 1 to 4 rotor disc at the first shop visit after accumulating 1,000 cycles since new on the stage 1 to 4 rotor disc or at the next shop visit after the effective date of this AD, whichever occurs later.

(2) Use paragraphs 3.A. through 3.E.(11) of the Accomplishment Instructions of RR Alert Non-Modification Service Bulletin (NMSB) No. RB.211-72-AF964, Revision 3, dated January 11, 2013, to do the cleaning and inspection.

(3) Thereafter, at every engine shop visit, perform the cleaning and inspection required by paragraph (e) of this AD.

(4) If on the effective date of this AD, an engine with an affected part has 1,000 CSN or more, and is in the shop, perform the cleaning and inspection required by paragraph (e) of this AD before return to service.

(5) If cracks or anomalies are found during the inspection required by paragraph (e) of this AD, accomplish the applicable corrective actions before return to service.

**(g) Definition**

For the purpose of this AD, an “engine shop visit” is whenever the HP compressor rotor is accessible for removal of the compressor blades.



**(h) Credit for Previous Actions**

If you performed cleanings and inspections before the effective date of this AD using RR NMSB No. RB.211-72-AF964, Revision 1, dated June 6, 2008, or Revision 2, dated June 8, 2011, then you met the requirements of paragraph (e)(1) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(j) Related Information**

(1) For more information about this AD, contact Frederick Zink, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email: [frederick.zink@faa.gov](mailto:frederick.zink@faa.gov).

(2) Refer to RR Alert NMSB No. RB.211-72-AF964, Revision 3, dated January 11, 2013, and European Aviation Safety Agency AD No. 2013-0042, dated February 26, 2013, for related information.

(3) For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011-44-1332-242424; fax: 011-44-1332-249936; or email: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); or download the publication from <https://www.aeromanager.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on May 1, 2013.

Colleen M. D'Alessandro,  
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Aircraft Certification Service.

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